

WHAT IS CLAIMED IS:

1. A cartridge recycling information apparatus that gives cartridge recycling information, said cartridge recycling information apparatus comprising:

a cartridge having a storage element that stores recycling information of the cartridge;

an output timing specification module that specifies an output timing of the recycling information; and

10 a recycling information output module that outputs the recycling information stored in the storage element at the output timing of the recycling information specified by said output timing specification module.

15 2. A cartridge recycling information apparatus in accordance with claim 1, wherein said recycling information output module utilizes the cartridge to print out the recycling information stored in the storage element.

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3. A cartridge recycling information apparatus in accordance with claim 1, said cartridge recycling information apparatus comprising multiple cartridges

corresponding to multiple different colors,
wherein said recycling information output module
utilizes a cartridge having a specific remaining quantity
of a coloring matter, which enables the recycling
5 information to be printed, among the multiple cartridges,
to print out the recycling information.

4. A cartridge recycling information apparatus in
accordance with claim 1, wherein the storage element
10 stores environmental information regarding an
environmental activity, and
said recycling information output module outputs the
environmental information in addition to the recycling
information.

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5. A cartridge recycling information apparatus in
accordance with claim 1, wherein said output timing
specification module acquires information on a remaining
quantity of a coloring matter kept in the cartridge and
20 specifies a timing when the remaining quantity enters a
preset small quantity range as the output timing of the
recycling information.

6. A cartridge recycling information apparatus in accordance with claim 5, wherein the preset small quantity range is specified to have a specific remaining quantity that is greater than zero and at least allows said
5 recycling information output module to print the recycling information.

7. A cartridge recycling information apparatus in accordance with claim 1, wherein said output timing
10 specification module specifies a timing when an input representing a start of replacement of the cartridge is received as the output timing of the recycling information.

15 8. A cartridge recycling information apparatus in accordance with claim 1, wherein said output timing specification module specifies a timing when an input representing completion of replacement of the cartridge is received as the output timing of the recycling
20 information, and

 said recycling information output module outputs the recycling information stored in a storage element of a used cartridge prior to the replacement at the output timing

of the recycling information specified by said output timing specification module.

9. A cartridge recycling information apparatus in
5 accordance with claim 1, wherein said output timing specification module specifies a timing when an input representing completion of replacement of the cartridge is received as the output timing of the recycling information, and

10 said recycling information output module compares the recycling information stored in a storage element of a used cartridge prior to the replacement with the recycling information stored in a storage element of a replacement cartridge and outputs a newer version of the
15 recycling information at the output timing of the recycling information specified by said output timing specification module.

10. A cartridge recycling information apparatus in
20 accordance with claim 1, wherein the storage element stores a recycle permission factor representing that the cartridge with the storage element is recyclable,
 said cartridge recycling information apparatus

further comprising:

a recyclability judgment module that determines whether the recycle permission factor is stored in the storage element; and

- 5 a recycling rejection output module that outputs a message showing that the cartridge with the storage element is unacceptable, when said recyclability judgment module determines that the recycle permission factor is not stored in the storage element.

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11. A cartridge having a storage element that stores recycling information of said cartridge.

12. A cartridge in accordance with claim 11, wherein
15 said storage element stores a recycle permission factor representing that said cartridge with said storage element is recyclable.

13. A cartridge recycling information method that
20 utilizes a cartridge having a storage element that stores recycling information of the cartridge and causes a computer to output recycling information, said cartridge recycling information method comprising the steps of:

(a) causing said computer to specify an output timing
of the recycling information; and

(b) causing said computer to output the recycling
information stored in the storage element at the output
5 timing of the recycling information specified in said step

(a).

14. A cartridge recycling information method in
accordance with claim 13, wherein said step (b) utilizes
10 the cartridge to print out the recycling information
stored in the storage element.

15. A cartridge recycling information method in
accordance with claim 13, wherein said step (b) utilizes
15 a cartridge having a specific remaining quantity of a
coloring matter, which enables the recycling information
to be printed, among multiple cartridges provided
corresponding to multiple different colors, to print out
the recycling information.

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16. A cartridge recycling information method in
accordance with claim 13, wherein the storage element
stores environmental information regarding an

environmental activity, and

said step (b) outputs the environmental information
in addition to the recycling information.

5 17. A cartridge recycling information method in
accordance with claim 13, wherein said step (a) acquires
information on a remaining quantity of a coloring matter
kept in the cartridge and specifies a timing when the
remaining quantity enters a preset small quantity range
10 as the output timing of the recycling information.

18. A cartridge recycling information method in
accordance with claim 17, wherein the preset small
quantity range is specified to have a specific remaining
15 quantity that is greater than zero and at least allows the
recycling information to be printed in said step (b).

19. A cartridge recycling information method in
accordance with claim 13, wherein said step (a) specifies
20 a timing when an input representing a start of replacement
of the cartridge is received as the output timing of the
recycling information.

20. A cartridge recycling information method in accordance with claim 13, wherein said step (a) specifies a timing when an input representing completion of replacement of the cartridge is received as the output
5 timing of the recycling information, and
said step (b) outputs the recycling information stored in a storage element of a used cartridge prior to the replacement at the output timing of the recycling information specified by said step (a).

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21. A cartridge recycling information method in accordance with claim 13, wherein said step (a) specifies a timing when an input representing completion of replacement of the cartridge is received as the output
15 timing of the recycling information, and
said step (b) compares the recycling information stored in a storage element of a used cartridge prior to the replacement with the recycling information stored in a storage element of a replacement cartridge and outputs
20 a newer version of the recycling information at the output timing of the recycling information specified by said step (a).

22. A cartridge recycling information method in accordance with claim 13, wherein the storage element stores a recycle permission factor representing that the cartridge with the storage element is recyclable,

5 in addition to said step (a) and (b), said cartridge recycling information apparatus further comprising the steps of :

 (c) determining whether the recycle permission factor is stored in the storage element; and

10 (d) outputting a message showing that the cartridge with the storage element is unacceptable, when said step (c) determines that the recycle permission factor is not stored in the storage element.